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10/067,347	02/07/2002	Koichiro Kishima	SON-2363	4610
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RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			PAK, SUNG H	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/067,347  
Filing Date: February 07, 2002  
Appellant(s): KISHIMA, KOICHIRO

**MAILED**

SEP 9 - 2004

**GROUP 2800**

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Ronald P. Kananen  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed April 02, 2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Current status of claims:

Claims 50-79 have been rejected.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on April 02, 2004 has been entered. The amendment is submitted to correct a minor typographical error.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because the claims as listed by the appellant are not separately patentable.

Claims 50-64 stand or fall together.

Claims 65-79 stand or fall together.

In the section below, the examiner has included arguments rebutting the appellant's allegation that claims are separately patentable.

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

6,434,297 B1	ALTHAUS ET AL	8-2002
5,768,456	KNAPP ET AL	6-1998

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 50-64 are rejected under 35 U.S.C. 102(e) as being anticipated by Althaus et al (US 6,434,297 B1).

Althaus et al reference discloses an optical device with all the limitations set forth in the claims including: an optical lens array including a lens substrate made from an optical material having a plurality of convex portions (Fig. 3, "10"); a convex portion of the plurality of convex portions having a convex shape and comprising a material the same as that of the lens substrate (Fig. 3); the lens substrate having a mask layer on the surface thereof (Fig. 3, "13"); the mask layer comprising a material different than the lens substrate (column 3 line 52); the overall height of the convex portion being specified, i.e. dependent, on the thickness and the diameter of the mask layer (Fig. 3, "10"+"4"); the curvature of the convex portion also defined by the thickness of the mask layer (Fig. 3); wherein the plurality of convex portions are arrayed on the lens substrate (Fig. 3); wherein the optical material is silicon oxide (column 3 lines 47-48); wherein the convex portion is an optical lens portion (abstract); wherein the mask layer portion is removed and lens substrate portions are removed from each other simultaneously (Fig. 3); wherein the mask layer portion of the plurality of mask layer portion is separate and distinct from adjacent plurality of mask layer portions (Fig. 3, "4"); wherein the lens substrate is exposed between the mask layer portion and adjacent mask layer portion (Fig. 3); wherein the mask layer portion has a curved surface (Fig. 3, "10", "4"); wherein the mask layer portion correspond to a formation region of the convex portion (Fig. 3); wherein a light absorber having aperture is formed on the lens substrate (Fig. 3, "4").

Art Unit: 2874

Claims 65-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al (US 6,434,297 B1) in view of Knapp et al (US 5,768,456).

Knapp et al reference was cited in the information disclosure statement.

Althaus et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of light emitting diode array and light receiving optical fiber arrays as recited in the claims.

Knapp et al reference teaches the use of a lens substrate containing plurality of convex lens portions with laser diode array or photodiode array (Figs. 3, Fig. 4); optical fiber arrays (Fig. 5); wherein the outer peripheral portions of adjacent two plurality of optical fiber arrays are in contact with each other (Fig. 5). Knapp et al reference teaches that such an optoelectronic package is advantageous and desirable because it allows for precise alignment between optoelectronic device and optical transmitting device (column 1 lines 53-63). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Althaus et al device to have a plurality of laser or photodiode array and optical fiber array as taught by Knapp et al.

**(11) Response to Argument**

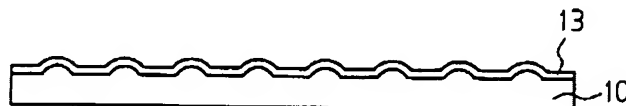
**Claims 50-64 are properly rejected under 35 U.S.C. 102(e) as being anticipated by Althaus et al (US 6,434,297 B1).**

Claims 50, 53-54, 56-57, and 59-63

On page 7 of the Appellant's Brief, appellant argues that "Althaus arguably teaches an optical system having a lens substrate 2 and a convex portion 7... Nevertheless, Althaus fails to disclose, teach or suggest the height of a convex portion 11 being *specified on the basis of a* thickness of the mask layer 13" (emphasis hereby added). Appellant elaborates this argument by stating, "mask layer 13 [in Althaus] is formed after the formation of the convex portions 11.... **There is no contribution made by the mask layer 13 of Althaus to the formation of the convex portions 11.**" (page 8 of the Appellant's Brief)

As stated in the Final Office Action, the examiner respectfully points out that, given the broadest reasonable interpretation of the claimed language, Althaus discloses all the claimed limitations, including "a height of the convex portion being specified on the basis of a thickness of [the] mask layer." (claim 50 of the instant application).

Althaus discloses, inter alia, a convex portion having a height (Fig. 3) and a mask layer (disposed on top of the convex portion) having a thickness (Fig. 3). The thickness of the mask layer specifies the height of the convex portion, because the mask layer is disposed directly on top of the convex portion and the mask layer demarcates the height of the convex portion (Fig. 3). The relevant portion of Figure 3 of Althaus is reproduced below.



The thickness of the mask layer ('13') clearly sets forth the boundary of the height of the convex portion, and limits how far the height of the convex portion extends. Therefore, the disclosure of Althaus clearly anticipates what is *actually* claimed in the claim language.

The appellant also argues that the claims recite convex portion comprising a material that is same as that of the lens substrate (page 7 of the Appellant's Brief). As stated in the previous office action, Althaus also discloses a convex portion that comprises a material that is same as the lens substrate, since the convex portion was formed from the lens substrate.

The appellant, in the After-Final Amendment filed on 2/10/2004 and the Appellant's Brief, argues that the claimed invention is distinguished over the prior art because "There is no contribution made by the mask layer 13 of Althaus to the *formation* of the convex portions 11." First, the examiner respectfully points out that the claims do not actually recite a mask layer 'contributing to the formation' of a convex portion.

Even if this feature were to be read into the claims, as argued by the appellants, Althaus still fully discloses a convex portion having a height, and a mask layer having a thickness. Manual of Patent Examining Procedure (MPEP) section 2113 states, "*The patentability of a product does not depend on its method of production.* If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (emphasis hereby added).



Further, the courts have ruled, "... it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable..." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). MPEP 2113. (emphasis hereby added).

In addition, MPEP 2114 states, "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)." (emphasis hereby added).

Since Althaus discloses all the structural elements of what is actually claimed in the claims, the claim rejection under 35 U.S.C. 102(e) is proper.

#### Claim 51

The rejection of this claim is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Art Unit: 2874

Appellant argues, “Althaus arguably depicts the formation of the mask layer 13 after the formation of the convex portions 11 (figure 3). Thus, Althaus fails to disclose, teach or suggest the curvature of convex portions 11 being specified on the basis of a diameter of the mask layer 13.” Further Appellant argues, “Althaus fails to disclose, teach or suggest the mask layer 13 as having a diameter.” (page 8 of the Appellant’s Brief)

The examiner respectfully points out, assuming *arguendo*, that mask layer 13 is formed after the formation of the convex portions, the thickness or the diameter of the mask layer sets forth the boundary of the curvature of the convex portions as shown in Fig. 3. In addition, Althaus discloses all the structural elements that is actually claimed in the claims as discussed with respect to claim 50, thus Althaus clearly anticipates the claimed limitations.

Also, the mask layer of Althaus inherently has a diameter because it is shown as being disposed directly on top of the convex portions of the lens substrate (Fig. 3).

For these reasons, claim 51 is not separately patentable, and claims 50-64 stand or fall together.

#### Claim 52

The rejection of this claim is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Art Unit: 2874

Appellant argues, “Althaus arguably depicts the formation of the mask layer 13 after the formation of the convex portions 11 (figure 3). Thus, Althaus fails to disclose, teach or suggest the curvature of convex portions 11 being specified on the basis of a thickness of the mask layer 13.” (page 9 of the Appellant’s Brief)

The examiner respectfully points out, assuming *arguendo*, that mask layer 13 is formed after the formation of the convex portions, the thickness or the diameter of the mask layer sets forth the boundary of the curvature of the convex portions as shown in Fig. 3. In addition, Althaus discloses all the structural elements that is actually claimed in the claims as discussed with respect to claim 50, thus Althaus clearly anticipates the claimed limitations.

For this reason, claim 52 is not separately patentable, and claims 50-64 stand or fall together.

#### Claim 55

The rejection of this claim is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Appellant argues that “Althaus fails to disclose, teach or suggest the metal layer 13 as [being] composed of a photoresist.” (page 9 of the Appellant’s Brief)

Art Unit: 2874

The examiner respectfully points out that a ‘photoresist’ can be broadly read and interpreted in the art to include any layer that is applied to a surface, exposed to light and developed prior to chemical etching during a photolithographic process. A metal mask layer of Althaus can be broadly construed as a photoresist because it may be applied to a surface, exposed to light and developed prior to chemical etching during a photolithographic process. Since the claimed limitation merely recite a “photoresist” without any additional material or structural limitations, the mask layer of Althaus anticipates the claimed element and the rejection is proper.

For this reason, claim 55 is not separately patentable, and claims 50-64 stand or fall together.

#### Claim 58

The rejection of this claim is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Appellant argues that “Althaus fails to disclose, teach or suggest a mask layer portion 4 of plurality of mask layer portions 4 and part of the lens substrate 10 being simultaneously removed.” (page 9 of the Appellant’s Brief)

Art Unit: 2874

The examiner respectfully points out the last 'step' depicted in Fig. 3 illustrates removal of the mask layer and the removal of portion of lens substrate (along line '14'- See fig. 3). In addition, the examiner respectfully points out that the claimed limitation recites a process step in a product claim. As discussed with respect to claim 50, since Althaus discloses all the structural elements of the claim, the claim is properly rejected under 35 U.S.C. 102(e).

For this reason, claim 58 is not separately patentable, and claims 50-64 stand or fall together.

#### Claim 64

The rejection of this claim is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Appellant argues that "Althaus fails to disclose, teach, or suggest a groove formed in lens substrate 10 between the convex portion 11 and another of the plurality of convex portions 11." (page 10 of the Appellant's Brief)

The examiner respectfully points out that Althaus clearly anticipates a groove formed in lens substrate between the convex portions. Merriam-Webster's dictionary defines 'groove' as "a long narrow channel or depression." Figure 3 of Althaus clearly shows a channel bounded by the convex portions on either side. Since the claim merely recites a groove formed between the

Art Unit: 2874

convex portions, and does not recite any other structural features that distinguishes over the Althaus device, the claim rejection under 35 U.S.C. 102(e) is proper.

For this reason, claim 64 is not separately patentable, and claims 50-64 stand or fall together.

**Claims 65-79 are properly rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al (US 6,434,297 B1) in view of Knapp et al (US 5,768,456).**

Claim 65-68, 70-72, and 74-77

The rejection of these claims is maintained at least for the reasons with respect to claim 50 discussed above, and for the following reasons.

Appellant argues that “Knapp arguably teaches an optoelectronic package having convex portion 140 and lens substrate 142 (figure 4). But like Althaus, Knapp fails to disclose, teach or suggest the height of the convex portion 142 being specified on the basis of a thickness of a mask layer.” (page 11 of the Appellant’s Brief)

The examiner respectfully points out that Althaus, NOT Knapp, was relied in the rejection for disclosing convex portions and a mask layer. The rejection is maintained for the same reasons discussed with respect to claim 50.

Claim 69

The rejection of these claims is maintained at least for the reasons with respect to claim 65 discussed above, and for the following reasons.

Appellant argues that “While Knapp arguably teaches a plurality of optical fibers 15, 115 (figures 2, 5), Knapp fails to disclose, teach or suggest the plurality of optical fibers 15, 115 being arrayed in such a manner that outer peripheral portions of adjacent two of the plurality of optical fibers 15, 115 are in contact with each other.” (page 12 of the Appellant’s Brief)

The examiner respectfully points out that although the exemplary and illustrative figures in Knapp (Figures 2,5) may not explicitly depict optical fibers having their outer peripheral portions in contact with each other, such a configuration is inherently, and implicitly taught by the detailed discussion of the Knapp reference.

Knapp discusses that one of the most important goal of its device is to achieve accurate passive alignment between array of optical fibers and array of photonic devices (such as Light Emitting Diodes “LEDs” or Vertical Cavity Surface Emitting Lasers “VCSELs”- column 1 lines 10-63; column 2 lines 58-63). Accurate passive alignment allows for cost-effective, high quality optical interconnects suitable for high volume manufacturing (column 1 line 59).

Art Unit: 2874

For achieving this goal, the device in Knapp comprises a fiber holder ('14', '114') which has precisely positioned holes for receiving optical fibers, wherein the locations of the holes are precisely formed with respect to the alignment holes ('24', '124') and array of photonic devices (column 3 lines 16- 19). In order for this optical interconnect to work most efficiently and effectively, the fiber holes must be arranged such that outer peripheries of the fibers contact each other. Such a configuration ensures *precise displacement of one fiber core from another*, so that optical beams emitted from the array of photonic devices can be *most efficiently coupled into the fiber*. Having outer peripheries of the fibers contact each other ensures consistent fiber hole positioning without any complex positioning process, and meets the goal of high-volume manufacturing with less cost.

Based on preponderance of what is disclosed in Knapp reference as a whole, "optical fibers arrayed in such a manner that outer peripheral portions of adjacent two of plurality of optical fibers are in contact with each other" is implicitly and inherently disclosed by Knapp.

For these reasons, claim 69 is not separately patentable, and claims 65-79 stand or fall together.

#### Claim 73

The rejection of these claims is maintained at least for the reasons with respect to claim 71 discussed above, and for the following reasons.



Art Unit: 2874

The appellant presents identical arguments for patentability as those presented with regard to claim 69. In response, the examiner rebuts the argument with the same reasoning presented with regard to claim 69.

For this reason, claim 73 is not separately patentable, and claims 65-79 stand or fall together.

#### Claim 78

The rejection of these claims is maintained at least for the reasons with respect to claim 74 discussed above, and for the following reasons.

The appellant presents identical arguments for patentability as those presented with regard to claim 69. In response, the examiner rebuts the argument with the same reasoning presented with regard to claim 69.

For this reason, claim 78 is not separately patentable, and claims 65-79 stand or fall together.

#### Claim 79

Art Unit: 2874

The appellant presents identical arguments for patentability as those presented with regard to claim 50. In response, the examiner rebuts the argument with the same reasoning presented with regard to claim 50.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



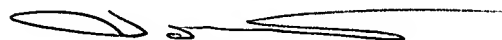
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